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(71) Applicant  
Summit Coin Limited,  
(Great Britain),  
Western Avenue,  
Bridgend Industrial Estate,  
Bridgend,  
Mid. Glamorgan

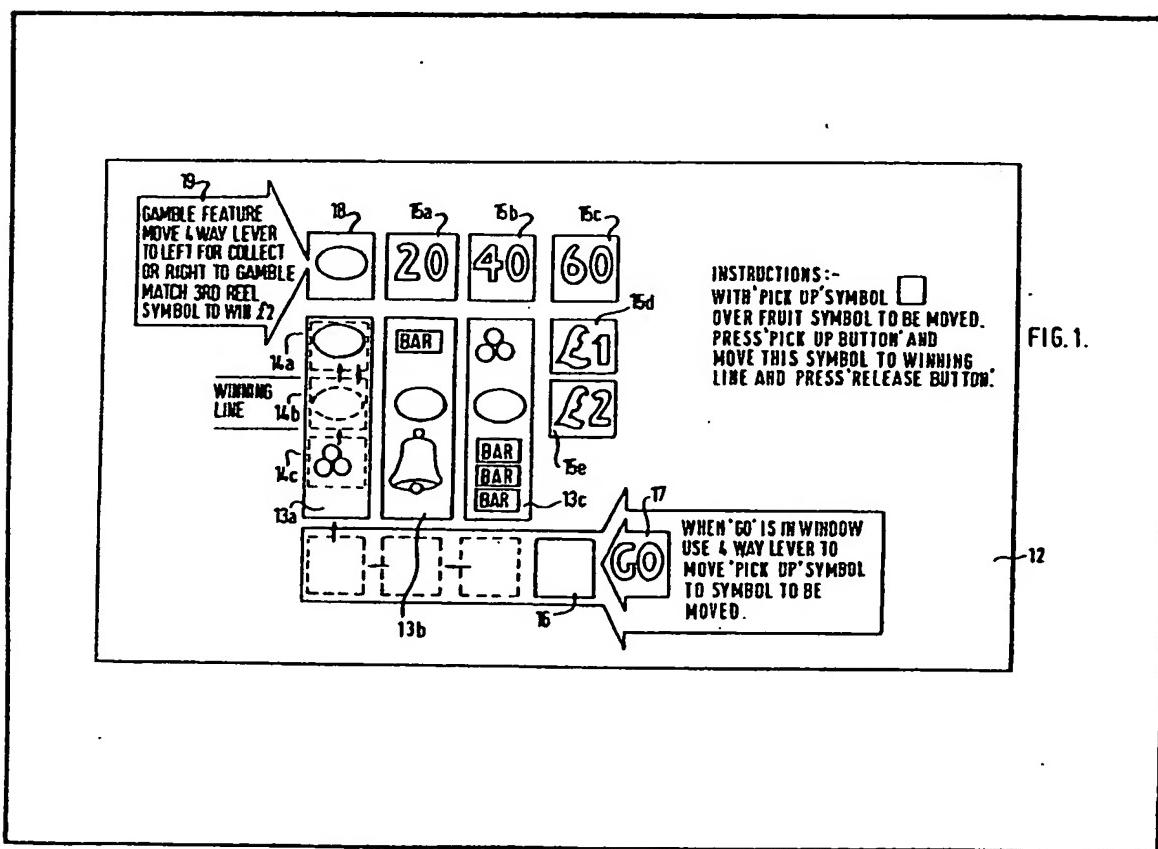
(72) Inventor  
Donald John Lest

(74) Agents  
Marks and Clerk,  
57—60 Lincoln's Inn  
Fields,  
London,  
WC2A 3LS

## (54) Coin-free gaming machine

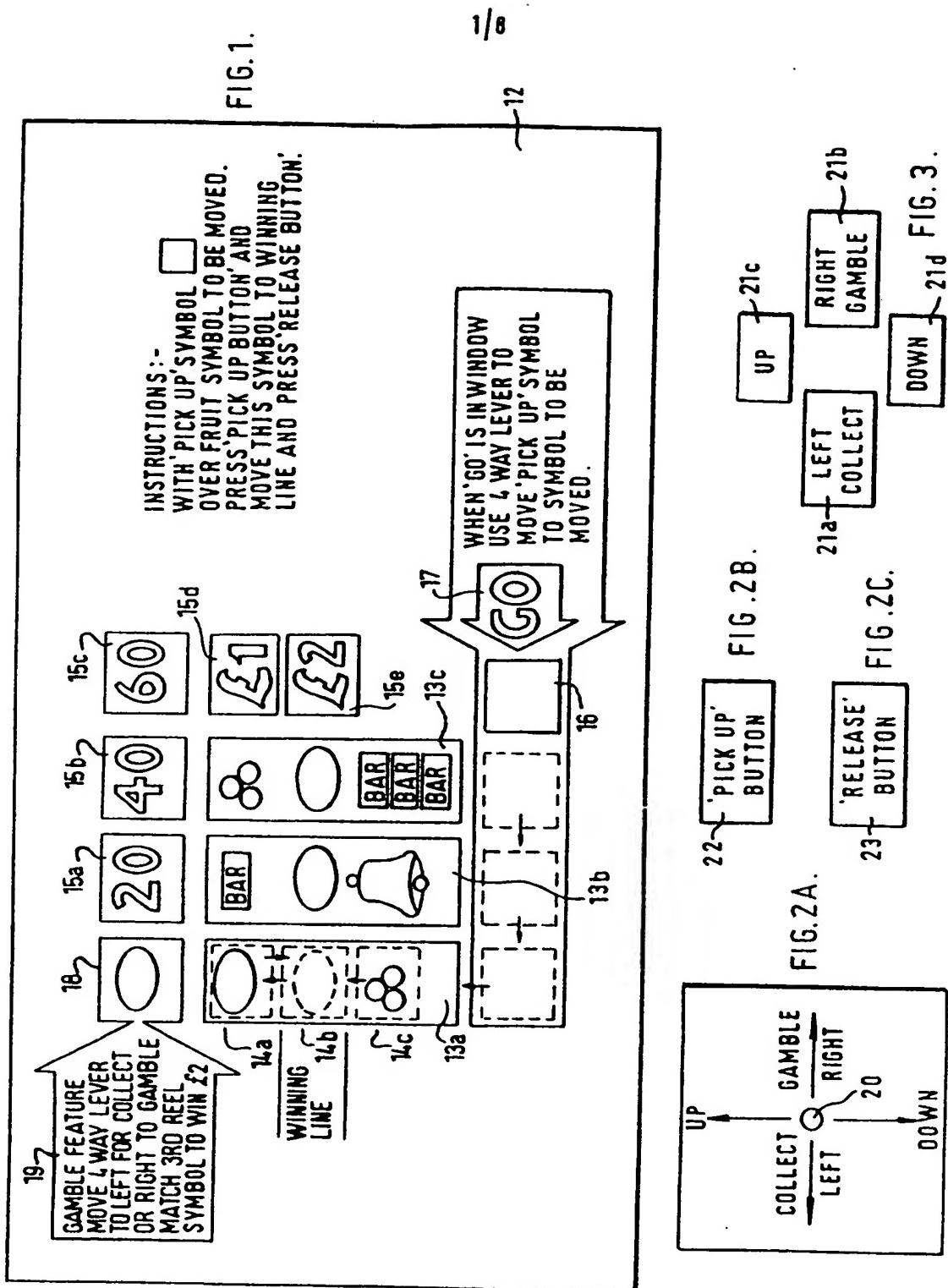
(57) In a "fruit machine" which displays the rotating reels 13a, 13b, 13c on a television screen 12, a player with a losing combination may be

granted a random chance to move a control symbol step-by-step along the screen to pick up a symbol and replace one symbol of a losing combination. If successful at this, he can then either collect his winning or gamble upon increasing it.



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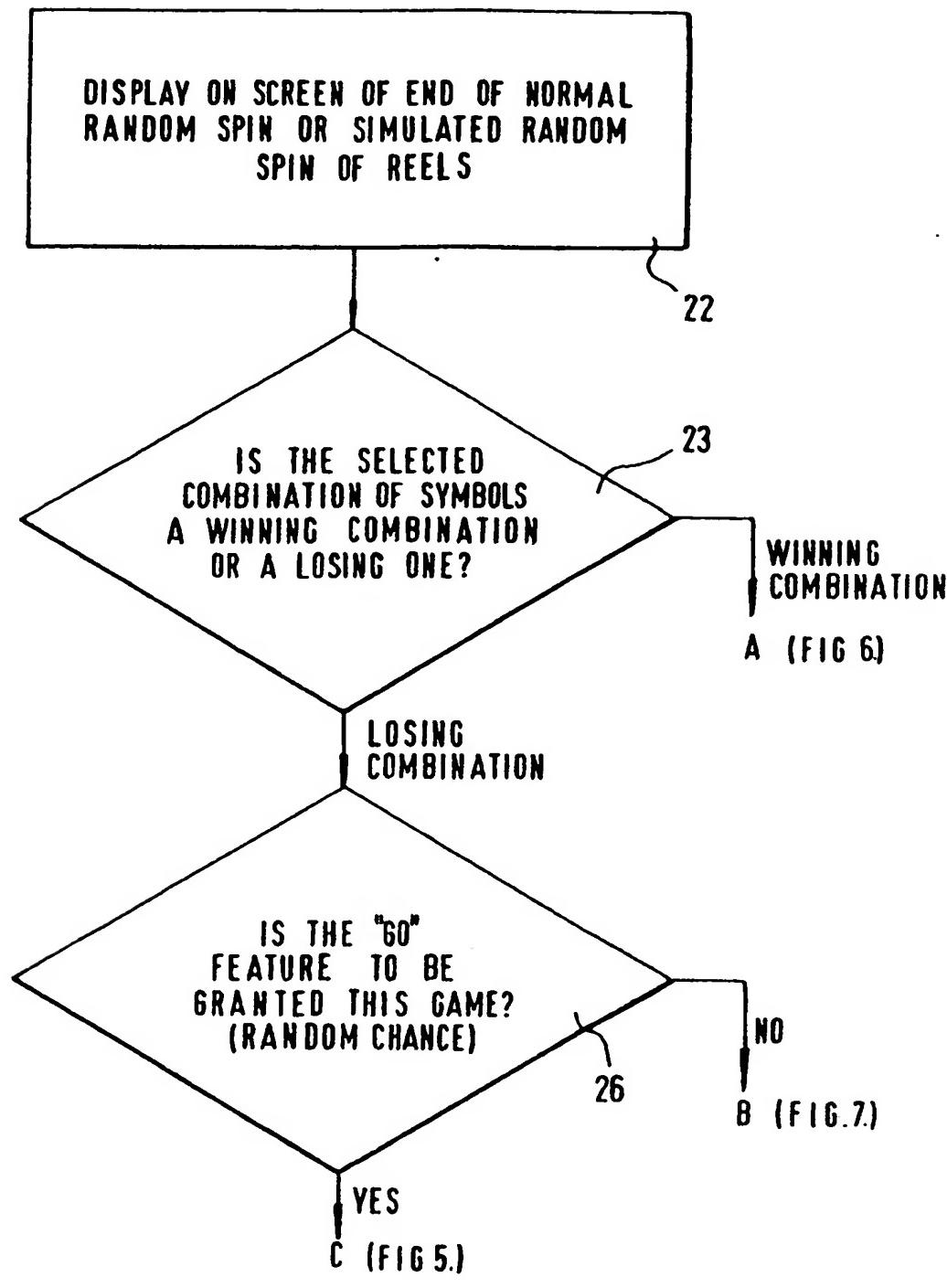


FIG.4.

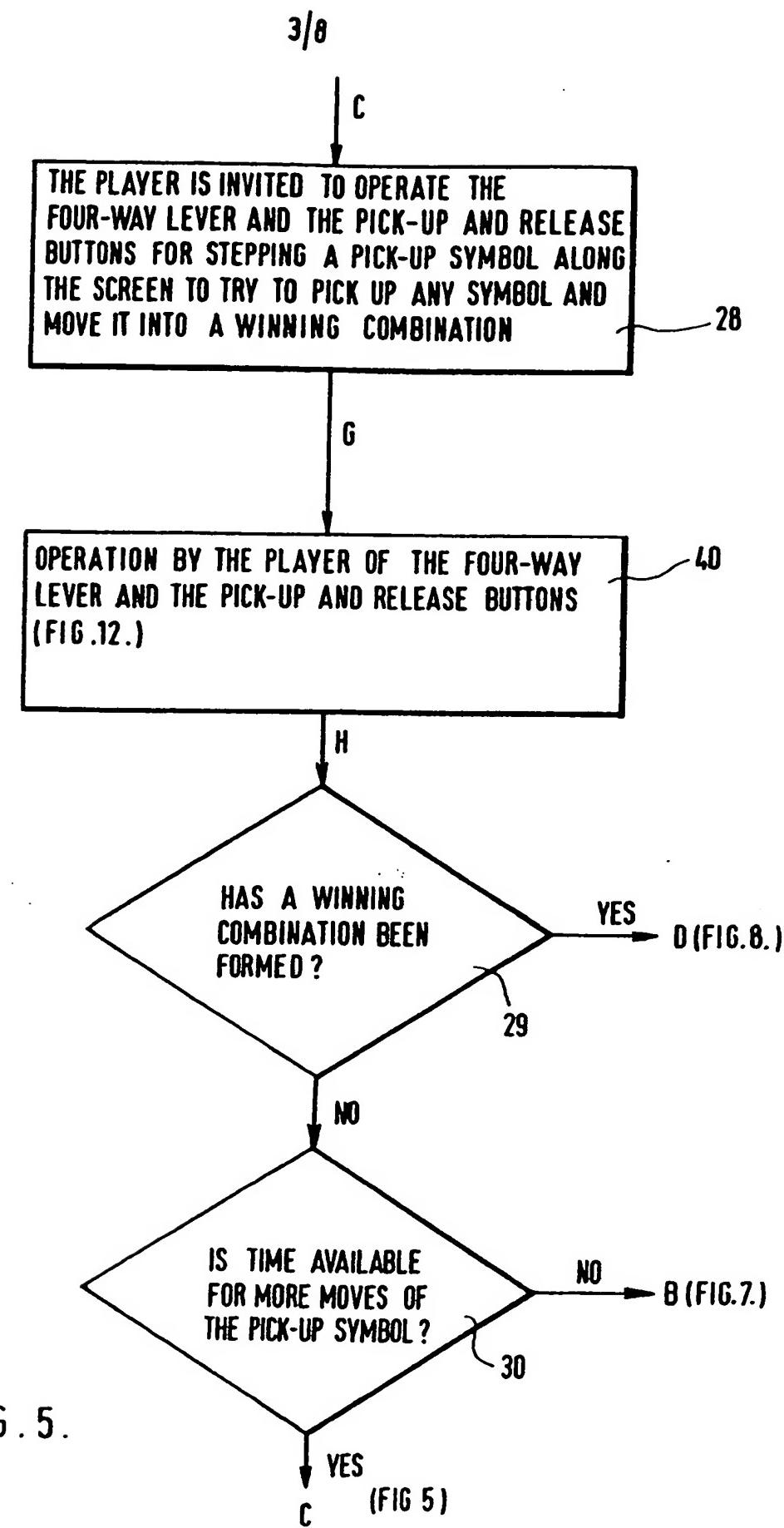


FIG. 5.

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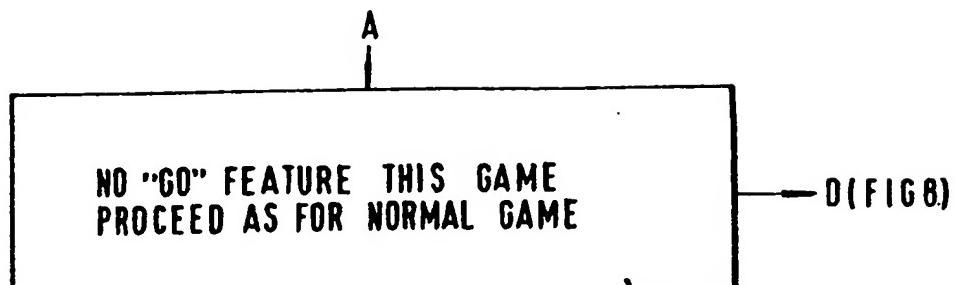


FIG. 6. 26

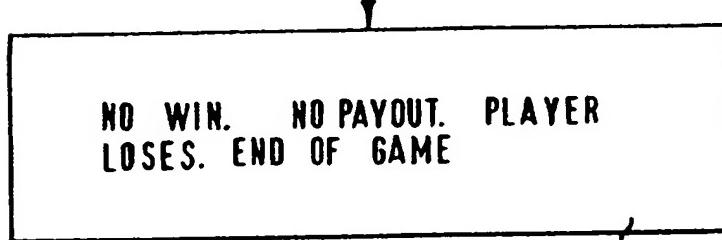


FIG. 7.

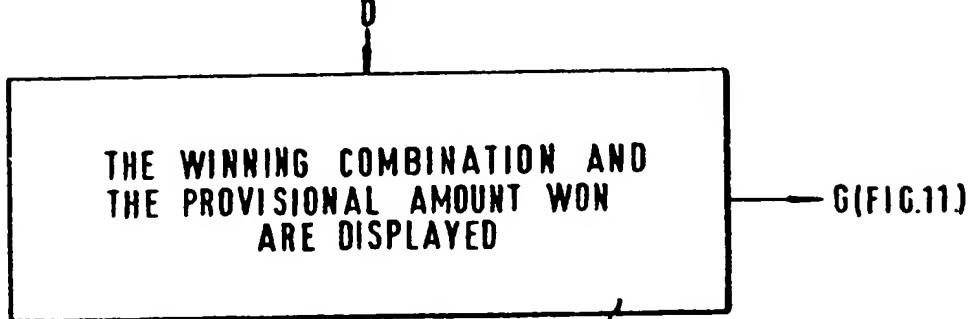


FIG. 8. 25

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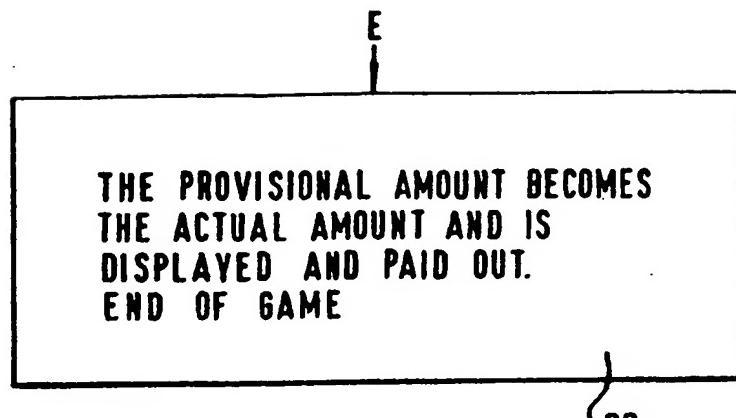
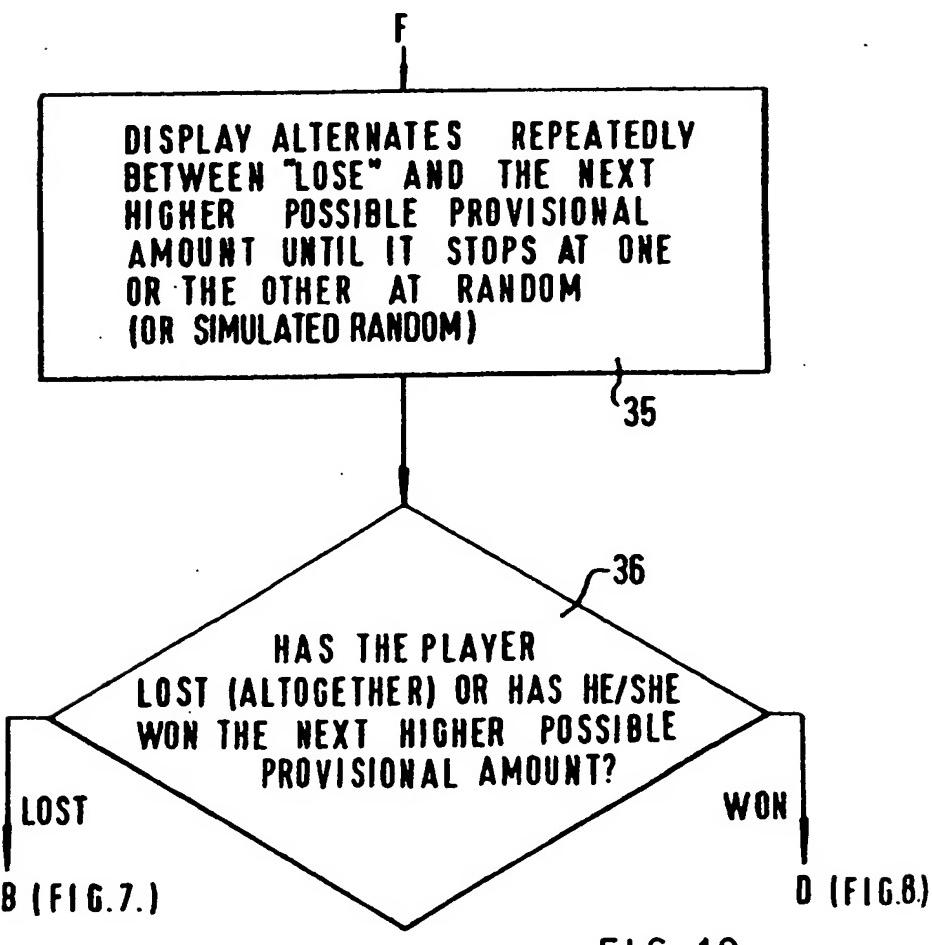


FIG. 9.



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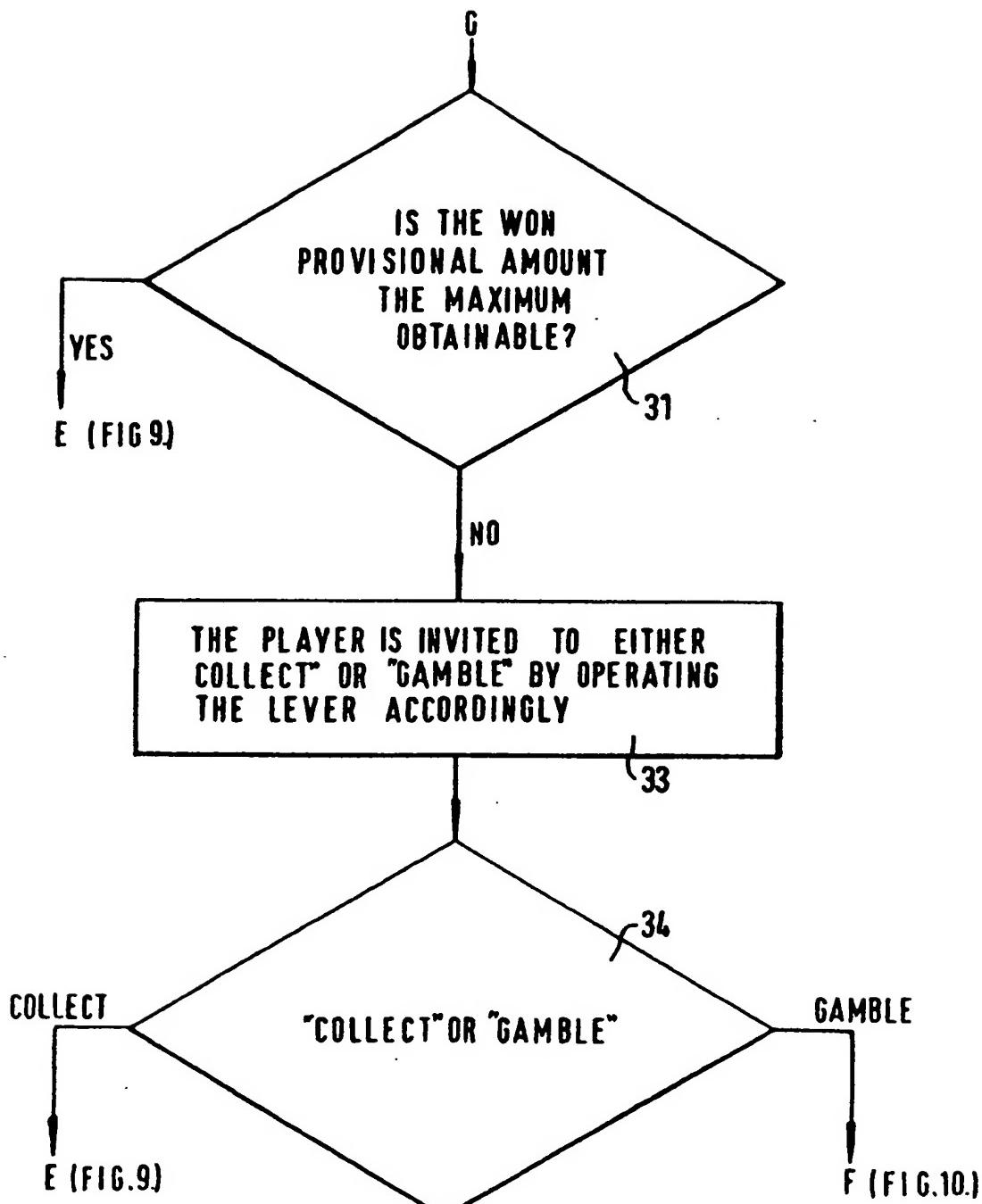


FIG.11.

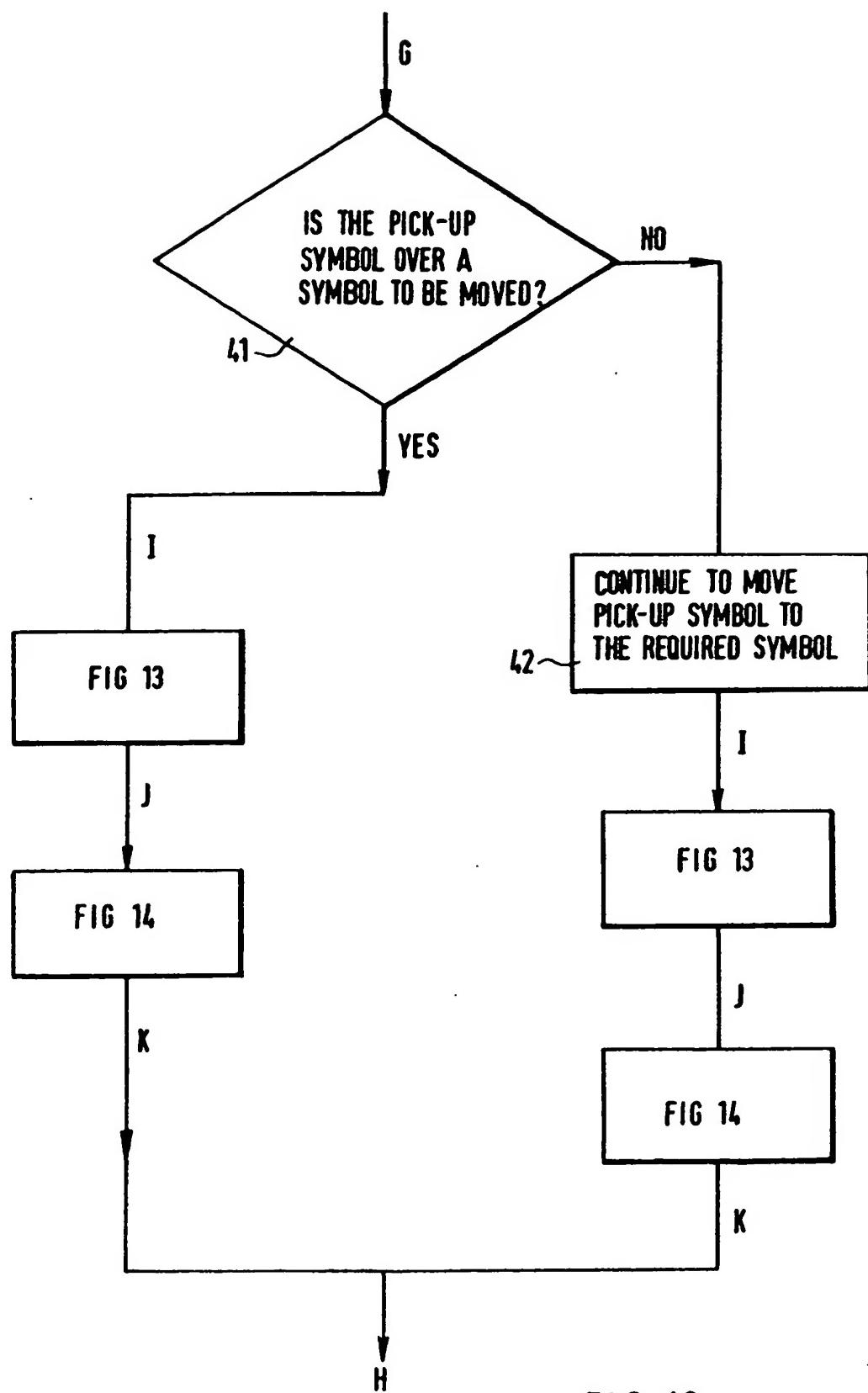
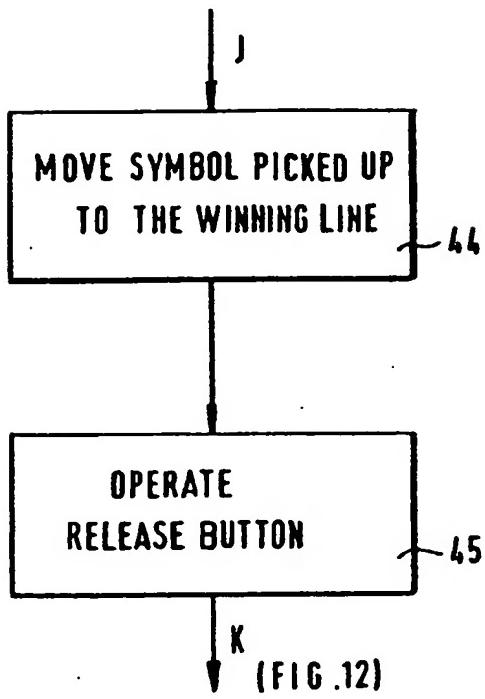
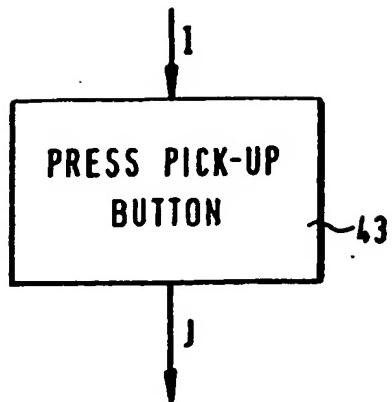


FIG.12.

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**SPECIFICATION**  
**Coin-free gaming machine**

- This invention relates to a coin-free gaming machine of the type comprising first means defining a plurality of separate series of symbols and second means operative to select any symbol from each series and to display the combination of selected symbols from said plurality of series.
- In a known and widely used exemplary machine of this type said first means takes the form of a plurality of rotatable reels or drums, said second means operates by rotating the reels or drums to positions in which the selected symbols are visible through a window, and many (if not all) of the symbols are pictures of various fruits, as a result of which the exemplary machine has become known colloquially as a "fruit machine".
- An object of the invention is to enable a machine of such a type to present a player with a chance of improving the result of a game.
- According to the invention there is provided a coin-free gaming machine comprising first means defining a plurality of separate series of symbols, second means operative to select a symbol from each series in a random or simulated random manner and to provide a selected combination of symbols and to select other symbols of the series and to display the selected combination and the other selected symbols on a screen, third means predefining some predetermined combinations of symbols as winning combinations and other combinations as losing combinations, fourth means operative to determine whether a selected combination is a winning combination or a losing combination, and fifth means operative on some but not all of the occasions that a losing combination is selected to enable the losing combination to be changed to a winning combination, the operative occasions being determined in a random or simulated random manner, said fifth means comprising sixth means operative to display on the screen, initially in a position spaced apart from the selected symbols, a control symbol, seventh means operable by the player for moving the control symbol on the screen in directions selected by the player, eighth means which, if operated when the control symbol is over one of the symbols displayed by the second means, to cause that symbol to move thereafter with the control symbol, and ninth means which, when operated, causes the seventh means to cease to have effect until the seventh means is again operated, whereby if the sixth, seventh and eighth means are operated correctly by the player one of the said other symbols selected by the second means can be moved into a desired position in which it becomes substituted for one of said selected combination of symbols to change a losing combination into a winning combination symbol such that, if substituted for one of the selected symbols, the losing combination would be changed to a winning combination, and tenth means operative by the player for moving the position of said other symbol on the screen in directions selected by the player such that, if some seventh means is operated correctly by the player, said other symbol can be moved to a desired position in which it becomes substituted for said one of the selected symbols so as to change the losing combinations to a winning combination.
- Preferably the screen is a cathode ray tube screen.
- Preferably said desired position is the actual position of said one of the selected combination of symbols.
- Preferably said fifth means comprises ninth means operative, in the event of a winning combination being obtained, to provide the player with a choice between either collecting a reward of a certain value or gambling upon increasing the value of the reward with the chance of decreasing the value of the reward.
- Preferably said ninth means is operative in the event of the value of the reward being increased to provide the player with a further choice between either collecting the reward of the increased value or gambling upon still further increasing the value of the reward with the chance of decreasing the value of the reward.
- Preferably the decrease in the value of the reward is to zero.
- Preferably said sixth means is operative to sometimes display the control signal and sometimes display a signal indicating the seventh and eighth means are inoperative in a random or simulated random manner.
- Preferably some losing combinations are such that said fifth means is incapable of changing any of them to a winning combination.
- Preferably said first and second means are operative to display or to simulate rotating reels or drums which stop at random or simulated random on the screen.
- The invention will be described by way of example with reference to the accompanying drawings, wherein:
- Fig. 1 illustrates the screen of a machine embodying the invention;
- Figs. 2A, 2B and 2C illustrate a four-way lever of the machine, a pick-up button and a release button respectively;
- Fig. 3 illustrates an array of four buttons as an alternative to the lever of Fig. 2; and
- Figs. 4 to 14 in combination form a "truth diagram" of the machine illustrating the logical sequence of events in operating the machine.
- Referring to Fig. 1 of the drawings, the machine is equipped with a television screen, shown schematically in Fig. 1, on which images are produced electronically by means within the machine in a manner analogous to the way in which images are produced on the television screens of well-known "space-invader" gaming machines.
- Shown on the television screen 12 are (images of) three rotating "fruit machine" reels 13a, 13b and 13c. As with conventional fruit machines, it is

- possible to see three complete symbols of each reel at any one time, so that the screen can show three horizontal rows 14a, 14b and 14c of three symbols each (that is, one symbol per reel per row) of which the middle row 14b is the row which determines, when all three reels have "stopped", whether the player has a winning line or not, as with conventional fruit machines.
- The machine is provided with a conventional printed list (not shown) showing various "winning lines" of symbols and the value of the award for each respective winning line, some winning lines being more valuable than others, as with conventional fruit machines. Illuminable signs 15a to 15e indicate awards of 20 pence, 40 pence, 60 pence, £1 and £2 respectively. Such an award may be actual or only provisional, as will be explained hereinafter.
- In addition to the total of nine symbols which are visible from the images of the three reels 13a, 13b and 13c, the screen shows a symbol, resembling a square or box in a space 16 near the bottom right hand corner of the screen. In the event of a "GO" feature being granted in any particular game (grant of the "GO" feature being at random or simulated random) the symbol which finally occupies space 16 can be made to move stepwise, in a manner discussed hereinafter, so as to become superimposed upon any of the nine symbols shown on the three reels 13a, 13b and 13c. The symbol shown in space 16 can be stepped horizontally beneath the three reels 13a, 13b and 13c, one step taking it to a position beneath reel 13c, a second step taking it to immediately beneath reel 13b and a third step taking it to a position immediately beneath reel 13a. When the symbol (for convenience called a "pick-up" symbol) has been stepped as desired to a position beneath reel 13a, 13b or 13c, it can be stepped upwardly so as to become superimposed upon, and to replace, the lowest symbol—in row 14c—after one step, the middle symbol—in row 14b—after another step and the highest symbol—in row 14a—after a third step. There is no maximum number of steps allowed in any one game other than a fixed time limit preferably sufficient for the pick-up symbol to pick up a symbol and move it as an example to the middle symbol in row 14b of the left hand reel 13a.
- Hence if, for example (as shown) it happens that the symbols in row 14b (of reels 13b and 13c) are plums and the pick-up symbol is moved to the top to collect a plum, the player can move that plum by pressing a pick-up button 22 (Fig. 2B) and moving the plum down into position 14b and then pressing a "release" button 23 (Fig. 2C). Operation of the release button 23 releases the symbol onto the winning line (a line of three plums being a winning line).
- Of course, it may happen that the NO symbol is shown in space 16, in which case, the "GO" feature is inoperative and the player is unable to create a winning line although of course the reels may stop in positions which give a winning line.
- An illuminable "GO" sign 17 informs the player

in the event that the "GO" feature is granted.

- In the event of the player successfully creating a winning line, with or without the "GO" feature (that is to say, either as a result of the images of the three reels 13a, 13b, 13c stopping in positions required to produce a winning line 14b or as a result of successful use of the "GO" feature producing a winning line 14b) a "GAMBLE OR COLLECT" feature becomes operative. When this happens, a space 18 at or near the top left hand corner of the screen is made to reproduce an image of the same symbol as the right hand symbol in row 14b of reel 13c and a sign 19 becomes illuminated to indicate to the player that he must choose between collecting the award shown (by illumination of one of the signs 15a to 15e) for the winning line or gambling upon increasing the award. At this stage, the award is provisional and is not actually paid out. If the player chooses to collect the award, the provisional amount becomes the actual amount and the machine pays it out, as with a conventional fruit machine. If the player chooses to gamble, assuming that he has not won the highest award of £2, then the symbol shown in space 18 jumps backwards and forwards between the space 18 on the one hand and the sign appertaining to the next highest award to the provisional award. For example, if the winning line obtained by moving the replacement symbol into the right place in row 14b corresponds to a provisional award of 40 pence, shown by illumination of sign 15b, and the player chooses to gamble, the symbol shown in space 18 jumps backwards and forwards between space 18 and the sign 15c which corresponds to the next highest award of 60 pence. If the symbol eventually stops in space 18, then the player loses altogether and does not even obtain the provisional award corresponding to the winning line. If the gamble succeeds, the sign 15c stays on and the provisional award becomes 60 pence, whereupon the player can again choose between collecting it or gambling for a still higher award of £1 (sign 15d). Again, as previously, the player may lose altogether or may succeed in making the provisional award the sum of £1, whereupon he again has the choice between collecting the award of £1 or gambling for the highest award of £2. Further description of playing a game on the machine is given below with reference to Figs. 4 to 11.
- Referring to Fig. 2A, there is shown a four way lever 20 which can be moved (against a centre-spring return-means, not shown) to the left or right or up or down. The lever 20 is used for stepping the replacement symbol from space 16 to the left, to the right, upwardly or downwardly. It is also used for the player to indicate (when sign 19 is lit) whether he wishes to collect his award (indicated by moving the lever to the left) or to gamble for a higher award (indicated by moving the lever to the right).

When the pick-up button 22 shown in Fig. 2B is pressed the underneath symbol is collected

whereas it is released when the release button 23 shown in Fig. 2C is pressed.

Referring to Fig. 3, there are shown four push buttons 21a to 21d which may be substituted for the lever 20 and used in an analogous manner.

- Referring to Figs. 4 to 14 which, as mentioned previously, in combination form a "truth diagram" of the machine, illustrating the logical sequence of events in operating the machine, logic circuitry 10 (not shown) within the machine detects (box 22, Fig. 4) the display on the screen 12 of the end of a normal random spin or simulated random spin of reels 13a, 13b and 13c. The logic circuitry then determines (box 23) whether the selected 15 combination of symbols at line 14b is a winning combination or a losing one. If the combination is a winning combination, the machine prohibits the granting of a "GO" feature for that particular game (box 24, Fig. 6) and displays the winning 20 combination and the provisional amount won (box 25, Fig. 8).

The logic circuitry then determines (box 31, Fig. 11) whether the won provisional amount is the maximum obtainable. If it is, the provisional 25 amount becomes the actual amount (box 32, Fig. 9) and is paid out and that is the end of the game. If it is not (box 31, Fig. 11) the player is invited to "COLLECT OR GAMBLE". What happens in this event is described hereinafter, since the same 30 "COLLECT OR GAMBLE" feature occurs after a successfully completed "GO" feature.

Referring back to Fig. 4, box 23, if the selected combination of symbols in line 14b is a losing combination, the logic circuitry determines (box 35 26) whether the "GO" feature is to be granted for this game, the chance of the feature being granted being a random or simulated random chance. If the logic circuitry determines that the "GO" feature is *not* to be granted, there is no win 40 and no payout (box 27, Fig. 7). The player loses and that is the end of the game.

Referring back to Fig. 4, box 26, if the logic circuitry determines that the "GO" feature *is* to be granted this game, the player is invited (box 28, Fig. 5) to operate the four-way lever 20 (Fig. 2) for stepping a pick-up symbol from space 16 (Fig. 1) along the screen 12 to try to pick up and release a selected "reel" symbol in line 14b. While this is in progress, the logic circuitry repeatedly tests to 50 see whether a winning combination has been formed (box 29) and, if a winning combination has been formed, the winning combination and the provisional amount won are displayed (box 25, Fig. 8).

Referring back to Fig. 5, so long as a winning combination has not been formed (box 29) the logic circuitry tests to see whether more moves of the pick-up symbol are allowed (box 30) there being a time limit. So long as more moves of the 60 replacement symbol are allowed, the player continues to be invited (box 28) to operate the four-way lever 20 (Fig. 2) for stepping the pick-up symbol along the screen 12 to try to pick up and release on the winning line. Box 40 and Fig. 12 indicate operation of the lever 20 and the buttons 65

22 and 23.

Referring to Fig. 12, if the pick-up symbol is not over the symbol to be picked up the lever 20 is used to move the pick-up symbol to the symbol to be picked up (box 42) and when that position is reached the pick-up button 22 is pressed (box 43, Fig. 13). Then the lever 20 is operated to move the picked up symbol to the desired position (box 44 Fig. 14) and the released button 23 is operated (box 45).

If and when the stage is reached that no winning combination has been formed (box 29) and no more moves of the replacement symbol are allowed (box 30) there is no win and no 80 payout (box 27, Fig. 7). The player loses and that is the end of the game.

Referring back to the condition that the formation of a winning combination in line 14b is detected (box 29) and this winning combination 85 and the provisional amount won are displayed (box 25, Fig. 8), the logic circuitry then determines (box 31, Fig. 11) whether the won provisional amount is the maximum obtainable. If it is, the provisional amount becomes the actual 90 amount (box 32, Fig. 9) and is paid out and that is the end of the game.

Referring back to box 31, Fig. 11, if the won provisional amount is not the maximum obtainable the "COLLECT OR GAMBLE" feature 95 mentioned earlier comes into operation. When this happens the player is invited (box 33, Fig. 11) to either "collect" or "gamble" by operating the lever 20 accordingly. The logic circuitry determines (box 34) whether the player has 100 decided to collect (by pushing lever 20 to the left, Fig. 2) or gamble (by pushing the lever 20 to the right). If the player has decided to collect, the provisional amount becomes the actual amount (box 32, Fig. 9) and is displayed and paid out, that 105 being the end of the game.

Referring back to box 34, Fig. 11, if the player has decided to gamble, the display alternates repeatedly between "lose" (represented by space 18, Fig. 1) and the next higher possible provisional 110 amount until it stops at one or the other at random (or simulated random) box 35, Fig. 10. The logic circuitry then determines (box 35, Fig. 10) whether the player has lost (altogether) or has won the next higher possible provisional amount. 115 If the player has lost, there is no win and no payout and that is the end of the game (box 27, Fig. 7). If the player has won the next higher possible provisional amount, the logic circuitry recycles to display the winning combination and 120 the provisional amount won (box 25, Fig. 8) to determine whether the won provisional amount is the maximum obtainable (box 31, Fig. 11) and, if so, to make the provisional amount the actual amount and to display it and pay it out (see above, box 32, Fig. 9) or if not to invite the player again either collect or gamble by operating the lever 20 accordingly, whereupon the same sequence of events takes place as described above commencing with determining whether the

player has decided to collect or gamble, box 34, Fig. 11.

#### Claims

1. A coin-freeed gaming machine comprising first means defining a plurality of separate series of symbols, second means operative to select a symbol from each series in a random or simulated random manner and provides a selected combination of symbols and to select other symbols of the series and to display the selected combination and the other selected symbols on a screen, third means predefining some predetermined combinations of symbols as winning combinations and other combinations as losing combinations, fourth means operative to determine whether a selected combination is a winning combination or a losing combination, and fifth means operative on some but not all of the occasions that a losing combination is selected to enable the losing combination to be changed to a winning combination, the operative occasions being determined in a random or simulated random manner, said fifth means comprising sixth means operative to display on the screen, initially in a position spaced apart from the selected symbols, a control symbol, seventh means operable by the player for moving the control symbol on the screen in directions selected by the player eighth means which, if operated, when the control symbol is over out of the symbols displayed by the second means, to cause that symbol to move thereafter with the control symbol, and eighth means which, when operated, causes the seventh means to cease to have effect until the seventh means is again operated, whereby if the sixth, seventh and eighth means are operated correctly by the player one of the said other symbols selected by the second means can be moved into a desired position in which it becomes substituted for one of said selected combination of symbols to change a losing combination into a winning combination symbol such that, if substituted for one of the selected symbols, the losing combination would be changed to a winning combination, and seventh means operable by the player for moving the position of said other symbol on the screen in directions selected by the player such that, if some seventh means is operated correctly by the player, said other symbol can be moved to a desired position in which it becomes substituted for said one of the selected symbols so as to change the losing combination to a winning combination.
2. A gaming machine as claimed in any preceding claim wherein after said second means has operated to carry out a selection the seventh and eighth means are only operative for a predetermined period.
3. A gaming machine as claimed in claim 1 wherein the screen is a cathode ray tube screen.
4. A gaming machine as claimed in any preceding claim wherein said desired position is the actual position of said one of the selected

#### 65 combination of symbols.

5. A gaming machine as claimed in any preceding claim wherein said fifth means comprises ninth means operative, in the event of a winning combination being obtained, to provide the player with a choice between either collecting a reward of a certain value or gambling upon increasing the value of the reward with the chance of decreasing the value of the reward.
6. A gaming machine as claimed in claim 5 wherein said ninth means is operative, in the event of the value of the reward being increased to provide the player with a further choice between either collecting the reward of the increased value or gambling upon still further increasing the value of the reward with the chance of decreasing the value of the reward.
7. A gaming machine as claimed in claim 5 or claim 6 wherein the decrease in the value of the reward is to zero.
8. A gaming machine as claimed in any preceding claim wherein said sixth means is operative to sometimes display the control signal and sometimes display a signal indicating the seventh and eighth means are inoperative in a random or simulated random manner.
9. A gaming machine as claimed in any preceding claim wherein some losing combinations are such that said fifth means is incapable of changing any of them to a winning combination.
10. A gaming machine as claimed in any preceding claim wherein said first and second means are operative to display or to simulate rotating reels or drums which stop at random or pseudo-random on the screen.
11. A coin-freeed gaming machine substantially as herein before described with reference to the accompanying drawings.

#### New claims or amendments to claims filed on 27-105 11-81

Superseded claims 1, 5 and 6

#### New or amended claims:

1. A coin-freeed gaming machine comprising first means defining a plurality of separate series of symbols, second means operative to select a symbol from each series in a random or simulated random manner and provide a selected combination of symbols and to select other symbols of the series and to display the selected combination and the other selected symbols on a screen, third means predefining some predetermined combinations of symbols as winning combinations and other combinations as losing combinations, fourth means operative to determine whether a selected combination is a winning combination or a losing combination, and fifth means operative on some but not all of the occasions that a losing combination is selected to enable the losing combination to be changed to a winning combination, the operative occasions being determined in a random or simulated random manner, said fifth means comprising sixth

- means operative to display on the screen, initially in a position spaced apart from the selected symbols, a control symbol, seventh means operable by the player for moving the control symbol on the screen in directions selected by the player, eighth means which, if operated, when the control symbol is over one of the symbols displayed by the second means, will cause that symbol to move thereafter with the control symbol, ninth means which, when operated, causes the eighth means to cease to have effect until the eighth means is again operated, whereby if the seventh, eighth and ninth means are operated correctly by the player one of the said other symbols selected by the second means can be moved into a desired position in which it becomes substituted for one of said selected combination of symbols to change a losing combination into a winning combination.
- 5 20 5. A gaming machine as claimed in any preceding claim wherein said fifth means comprises tenth means operative, in the event of a winning combination being obtained, to provide the player with a choice between either collecting 25 a reward of a certain value or gambling upon increasing the value of the reward with the chance of decreasing the value of the reward.
- 10 6. A gaming machine as claimed in claim 5 wherein said tenth means is operative, in the 30 event of the value of the reward being increased to provide the player with a further choice between either collecting the reward of the increased value or gambling upon still further increasing the value of the reward with the 35 chance of decreasing the value of the reward.
- 15